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K-1786
PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of OJANEN)
Serial No. 09/838,348) Group Art Unit 3673
Filed: April 19, 2001)
For: ROTATABLE CUTTING TOOL) Examiner: Singh, Sunil
HAVING RETAINER WITH DIMPLES)

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Date: October 9, 2007

Signature:

Rhonda L. Sanders

Type or Print Name of Person Certifying

October 9, 2007

TRANSMITTAL OF SUBSTITUTE APPEAL BRIEF IN

RESPONSE TO NOTIFICATION OF NON-COMPLIANT APPEAL BRIEF

In response to the Notification of Non-Compliant Appeal Brief mailed September 10, 2007, appellant hereby submits a substitute appeal that addresses the issues raised by the above Notice. In reference to the Summary of the Claimed Subject Matter, appellant has set forth each one of the five independent claims and matched up the limitations in the claims to the drawing figures via reference numerals and to the specification by page and line number.

Respectfully submitted,

Stephen T. Belsheim

179 Belle Forrest Circle Suite 102
Nashville, Tennessee 37221
Telephone 615-662-0100
Facsimile 615-662-0352
Customer No. 1400
October 9, 2007

K-1786
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES

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Date: October 9, 2007

Signature: 

Rhonda L. Sanders

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October 9, 2007

Sir:

APPEAL BRIEF UNDER 37 CFR §41.37

INTRODUCTION

In compliance with 37 CFR §41.37(a)(1), the original Appeal Brief was filed within two (2) months of the filing of the Notice of Appeal on June 8, 2007. Appellant files this substitute Appeal Brief within one month of the mailing date of the Notice of Noncompliant Brief. In compliance with 37 CFR §41.37(a)(2), the appropriate fee accompanied the filing of the original Appeal Brief per the earlier-filed TRANSMITTAL OF APPEAL BRIEF. Per the requirement of 37 CFR §41.37(c)(1), this Appeal Brief contains the items under the appropriate headings called out in 37 CFR §41.37(c)(1)(i) through 37 CFR §41.37(c)(1)(x).

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REAL PARTY IN INTEREST

To satisfy the requirement under 37 CFR §41.37(c)(1)(i), Kennametal Inc. of Latrobe, Pennsylvania 15650 United States of America, the assignee of the present patent application, is the real party in interest.

RELATED APPEALS AND INTERFERENCES

To satisfy the requirement under 37 CFR §41.37(c)(1)(ii), there are no related appeals and interferences. However, appellant points out the following in this patent application:

- (a) on August 5, 2005, appellant filed a Notice of Appeal;
- (b) on October 5, 2005, appellant filed an Appeal Brief; and
- (c) on January 17, 2006, rather than filing an Examiner's Answer, the Primary Examiner issued still another non-final Office Action containing only rejections under 35 USC §112^{¶2nd}.

Obviously, the Board did not ever render a decision in that first appeal.

STATUS OF THE CLAIMS

To satisfy the requirement under 37 CFR §41.37(c)(1)(iii), the status of the claims in the patent application is set forth as follows: (a) claims 1-14, 18-28, 31, 35, and 41-42 are cancelled, and (b) claims 15-17, 29, 30, 32-34, 36-40 and 43-47 are rejected and are under appeal.

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STATUS OF AMENDMENTS

To satisfy the requirement under 37 CFR §41.37(c)(1)(iv), appellant states the following:

- (a) on May 21, 2007, appellant filed a Response to Final Office Action of February 8, 2007 by which appellant amended claims 16, 30, 34 and 38 to overcome objections thereto; and
- (b) on June 11, 2007, the Primary Examiner mailed an Advisory Action by which the Primary Examiner entered the Response of May 21, 2007 into the prosecution file (see Item 7(b) of the Advisory Action) so that claims 15-17, 29, 30, 32-34, 36-40, and 43-47 still stand rejected.

SUMMARY OF THE CLAIMED SUBJECT MATTER

To satisfy the requirement of 37 CFR §41.37(c)(1)(v), a summary of claimed subject matter for the independent claims is set forth below.

For independent claim 15, there is a cutting tool assembly (10) for rotatable retention within a bore (20), which includes a groove (38), of a bit holder (18). The assembly (10) comprises a cutting tool (12) and a retainer sleeve (40) carried by the cutting tool (12). See page 7, lines 24-35; page 9, lines 9-11 (regarding groove 38); lines 1-2 of the replacement paragraph at (as-filed) page 9, line 12 [per Amendment of October 28, 2003]¹. The retainer sleeve (40) includes a radially outward projecting dimple (46) that is received within the groove (38). See lines 10-12 of the replacement paragraph at (as-filed) page 11, line 14 [per Amendment of October 28, 2003]. The retainer sleeve (40) has a cylindrical circumference (see lines 5-7 of the replacement paragraph at (as-filed) page 9, line 12 [per Amendment of

¹ Per the Amendment of October 28, 2003, appellant replaced the paragraphs in the specification beginning at page 9, line 12 and at page 11, 14. Hence, the citations are to the text as presented in the Amendment of October 28, 2003.

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October 28, 2003]) and a thickness dimension (see thickness at FIGS. 6-10 and 12; page 17, lines 13-17). The amount of radial projection of the dimple (46) beyond the cylindrical surface of the retainer sleeve (40) is between a minimum equal to about 15 percent of the thickness dimension of the retainer sleeve (40) so as to provide sufficient holding force to rotatably retain the cutting tool (12) within the bore (20) during operation and a maximum equal to about 30 percent of the thickness dimension of the retainer sleeve (40) so as to provide for a maximum force to allow the removal of the cutting tool (12) from the bore (20) without the necessity of excessive force. See page 10, line 34 through page 11, line 15; page 12, lines 21-27; page 13, lines 8-15; and lines 1-3 and lines 7-8 of the replacement paragraph at (as-filed) page 11, line 14 [per Amendment of October 28, 2003]; page 17, lines 13-17.

For independent claim 29, there is a retainer (40) for use in conjunction with a cutting tool (12). See lines 1-2 of the replacement paragraph at (as-filed) page 9, line 12 [per Amendment of October 28, 2003]. The retainer (40) comprises a retainer sleeve (40) carried by the cutting tool (12) and including a radially outward projecting dimple (46). See lines 1-5 of the replacement paragraph at (as-filed) page 11, line 14 [per Amendment of October 28, 2003]. The retainer sleeve (40) has a cylindrical circumference (see lines 5-7 of the replacement paragraph at (as-filed) page 9, line 12 [per Amendment of October 28, 2003]) and a thickness dimension (see thickness at FIGS. 6-10 and 12; page 17, lines 13-17). The amount of radial projection of said dimple (46) beyond the cylindrical surface of the retainer sleeve (40) is between about 15 percent and about 30 percent of the thickness dimension of said retainer sleeve. See lines 7-8 of the replacement paragraph at (as-filed) page 11, line 14 [per Amendment of October 28, 2003]; page 17, lines 13-17.

For independent claim 39, there is a cutting tool assembly (10) that comprises a cutting tool (12) and a retainer sleeve (40) carried by the cutting tool (12). See page 7, lines 24-35; see lines 1-2 of the replacement paragraph at (as-filed) page 9, line 12 [per Amendment of October 28, 2003]. The retainer sleeve (40) includes a radially outward protruding surface (46). The retainer sleeve (40) has a cylindrical circumference (see lines 5-

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7 of the replacement paragraph at (as-filed) page 9, line 12 [per Amendment of October 28, 2003] and a thickness dimension (see thickness at FIGS. 6-10 and 12; page 17, lines 13-17). The amount of radial projection of the protruding surface (46) beyond the cylindrical surface of the retainer sleeve (40) is between about 15 percent and about 30 percent of the thickness dimension of said retainer sleeve (40). See lines 7-8 of the replacement paragraph at (as-filed) page 11, line 14 [per Amendment of October 28, 2003]; page 17, lines 13-17.

For independent claim 40, there is a retainer (40) for use in conjunction with a cutting tool (12). The retainer (40) comprises a retainer sleeve (40) carried by the cutting tool (12) and including a radially outward protruding surface (46). See lines 1-5 of the replacement paragraph at (as-filed) page 11, line 14 [per Amendment of October 28, 2003]. The retainer sleeve has a cylindrical circumference (see lines 5-7 of the replacement paragraph at (as-filed) page 9, line 12 [per Amendment of October 28, 2003]) and a thickness dimension (see thickness at FIGS. 6-10 and 12; page 17, lines 13-17). The amount of radial projection of the protruding surface (46) beyond the cylindrical surface of the retainer sleeve (40) is between about 15 percent and about 30 percent of the thickness dimension of said retainer sleeve (40). See lines 7-8 of the replacement paragraph at (as-filed) page 11, line 14 [per Amendment of October 28, 2003]; page 17, lines 13-17.

For independent claim 43, there is a generally cylindrical retainer (40) for use in conjunction with a cutting tool (12). The retainer (40) comprises a retainer sleeve (40) carried by the cutting tool (12) and including at least two radially outward projecting dimples (46). See lines 1-5 of the replacement paragraph at (as-filed) page 11, line 14 [per Amendment of October 28, 2003]. The retainer sleeve (40) has a central longitudinal axis (see lines 5-7 of the replacement paragraph at (as-filed) page 11, line 14 [per Amendment of October 28, 2003]) and a thickness dimension (see FIGS. 6-10 and 12). All of said at least two dimples (46) are generally located within a common radial plane. See lines 6-7 of the replacement paragraph at (as-filed) page 11, line 14 [per Amendment of October 28, 2003]. The amount of radial projection of each one of said at least two dimples (46) beyond the

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cylindrical surface of the retainer sleeve (40) is between about 15 percent and about 30 percent of the thickness dimension of said retainer sleeve (40). See lines 7-8 of the replacement paragraph at (as-filed) page 11, line 14 [per Amendment of October 28, 2003]; page 17, lines 13-17. The retainer sleeve is constructed from steel. See page 17, lines 13-17.

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

To satisfy the requirement under 37 CFR §41.37(c)(1)(vi), a concise statement of the grounds for rejection as presented in the Final Office Action of February 8, 2007 to be reviewed on appeal are as follows:

- (1) the rejection of claims 15-17, 29-30, 32-34, 36-40 and 43-47 under 35 USC §102(e) as being anticipated by U.S. Patent No. 6,397,652 to Sollami (see Paragraphs 2 and 3 of the February 8, 2007 final Office Action);
- (2) the rejection of claims 15-17, 29-30, 32-34, 36-40 and 43-47 under 35 USC §103(a) as being obvious over U.S. Patent No. 6,397,652 to Sollami because of the alleged basis that, "... where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art ..." citing *In re Aller*, 105 USPQ 233 (see Paragraphs 4 and 5 of the February 8, 2007 final Office Action);
- (3) the rejection of claims 15-17, 29-30, 32-34, 36-40 and 43-47 under 35 USC §103(a) as being obvious over U.S. Patent No. 6,397,652 to Sollami because of the alleged basis that, "... discovering an optimum value of a result effective variable involves only routine skill in the art ..." citing *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980) (see Paragraphs 4 and 6 of the February 8, 2007 final Office Action); and
- (4) the rejection of claims 15-17, 29-30, 32-34, 36-40 and 43-47 under 35 USC §103(a) as being obvious over U.S. Patent No. 6,397,652 to Sollami because of the alleged basis that, "... [A] change in size is generally recognized as being

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within the level of ordinary skill in the art ..." citing *In re Rose*, 105 USPQ 237 (CCPA 1955) (see Paragraphs 4 and 7 of the February 8, 2007 final Office Action).

ARGUMENT

Introduction

To satisfy the requirement under 37 CFR §41.37(c)(1)(vii), appellant's contentions as to each ground of rejection are set forth below.

As an introductory comment, appellant believes that it would be helpful to the Board to present the main point of contention, which is the disagreement over the amount of the radial projection of the protrusion (31) beyond the cylindrical surface of the retainer in FIG. 15 of the '652 Sollami Patent. The Primary Examiner says that it falls within the range of between about 15 percent to about 30 percent of the thickness dimension of the retainer. This range is set forth in each one of the independent claims.

In this regard, claim 15, from which claims 16-17 depend, reads [in part and emphasis added]:

... the amount of radial projection of said dimple beyond the cylindrical surface of the retainer sleeve is between a minimum equal to about 15 percent of the thickness dimension of the retainer sleeve so as to provide sufficient holding force to rotatably retain the cutting tool within the bore during operation and a maximum equal to about 30 percent of the thickness dimension of said retainer sleeve so as to provide for a maximum force to allow the removal of the cutting tool from the bore without the necessity of excessive force.

Claim 29, from which claims 30, 32, 33, 34, 36, 37 and 38 depend, reads [in part and emphasis added]:

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... the amount of radial projection of said dimple beyond the cylindrical surface of the retainer sleeve is between about 15 percent and about 30 percent of the thickness dimension of said retainer sleeve.

Claim 39 reads [in part and emphasis added]:

... the amount of radial projection of said protruding surface beyond the cylindrical surface of the retainer sleeve is between about 15 percent and about 30 percent of the thickness dimension of said retainer sleeve.

Claim 40 reads [in part and emphasis added]:

... the amount of radial projection of said protruding surface beyond the cylindrical surface of the retainer sleeve is between about 15 percent and about 30 percent of the thickness dimension of said retainer sleeve.

Claim 43, from which claims 44-47 depend, reads [in part and emphasis added]:

... the amount of radial projection of each one of said at least two dimples beyond the cylindrical surface of the retainer sleeve is between about 15 percent and about 30 percent of the thickness dimension of said retainer sleeve, ...

Appellant disagrees with the Primary Examiner for several reasons. First, the Primary Examiner's measurement of the radial projection of the dimple in FIG. 15 of the '652 Sollami Patent by the Primary Examiner is wrong. In actuality, the radial projection is greater than the 15-30% of the claims. Second, FIG. 15 of the '652 Sollami Patent has an inherent flaw (i.e., the protrusions (31) are not in cross-section while the rest of the retainer is in cross-section) that makes it inappropriate to determine the actual radial projection of the dimples. Third, the Primary Examiner bases the obviousness rejections on hindsight wherein the cited case decisions are inapplicable to this set of facts.

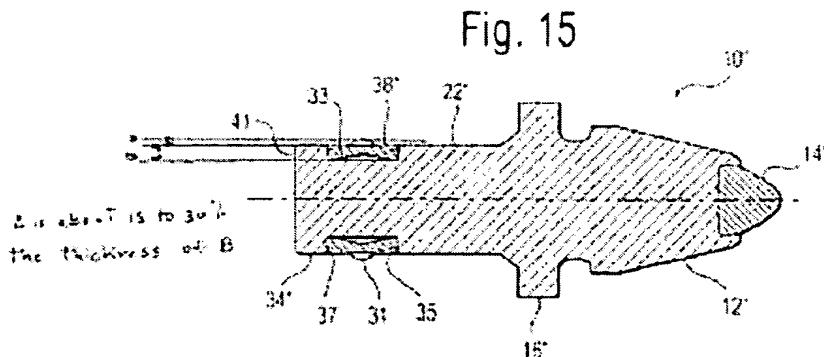
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The Rejection of Claims 15-17, 29-30, 32-34, 36-40 and 43-47
under 35 USC §102(e) as being anticipated by the '652 Sollami Patent
Statement of the Rejection

Per Paragraphs 2 and 3 of the February 8, 2007 final Office Action, the Primary Examiner rejected claims 15-17, 29-30, 32-40 and 43-47 under 35 USC §102(e) as being anticipated by the '652 Sollami patent. In short, the Examiner stated that all of the limitations of the claims exist in the '652 Sollami Patent, and in doing so, referred to a marked-up copy of FIG. 15 of the '652 Sollami Patent. A reproduction of the Examiner's



attachment is set forth above.

Appellant disagrees with the Primary Examiner's position because the claims call for the dimples to protrude from the retainer surface to a much lesser extent (i.e., 15-30%) than in the '652 Sollami Patent, as well as all of the prior art applied at one time or another during this prosecution².

To best understand the strength of appellant's argument, there must be an appreciation that the extent the dimple protrudes from the retainer surface is a meaningful

² For example, in the Office Action of July 26, 2004, the Primary Examiner applied thirteen different patents against the claims.

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feature of the invention that provides a meaningful advantage. At page 10, line 34 through page 11, line 13, appellant recognizes that the prior art tools with the larger dimples (e.g., see U.S. Patent No. 4,484,783 to Emmerich and U.S. Patent No. 3,519,309 to Engle et al.) often become difficult to remove because dirt and debris penetrate the clearances between the shank, the retainer and the bit holder bore. The dirt and debris then accumulate in the shank annular groove. At page 11, lines 10-13, the present patent application reads:

“This debris and dirt interferes with the inward radial play of the radially protruding surfaces, making the tools very difficult and sometimes impossible to remove.”

In light of the larger size of the protrusions in the retainers of the ‘783 Emmerich Patent and the ‘309 Engle et al. Patent, a significant amount of inward radial play is necessary to retract the protrusions to remove the retainer. If dirt and debris penetrate the volume between the retainer and the groove in the shank of the tool so the retainer is unable to contract in the radial inward direction a sufficient distance, one cannot remove the tools without shearing off the protrusions. This is contrast to the present invention that:

... includes protruding dimples that are designed to require no radial play and, therefore, do not suffer from the same drawback as the prior art. ...

See page 11, lines 14-17.

The reason the dimples of the present invention do not require inward radial play to be removed is because they extend a smaller distance away from the surface of the retainer. This is a meaningful advantage over the prior art that includes tools like disclosed in the ‘652 Sollami Patent that have a retainer with the larger protrusions or dimples.

In addressing the numerical range as set forth in the claims, the Examiner used the ‘652 Sollami Patent and wrote, “... the amount of radial projection of said protruding surface beyond the cylindrical surface of the retainer is between about 15 percent and about 30 percent of the thickness dimension of said retainer (see attached marked up Fig. 15).” See

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page 3 of the Final Office Action of February 8, 2007. The Primary Examiner is in error for two basic reasons.

First, the radial projection of the dimples of the retainer in FIG. 15 of the '652 Sollami Patent is much greater than the claim recitation of 15-30%. In the October 5, 2005 Appeal Brief in this patent application and using Appeal Exhibit 4 therefrom as support, appellant argued that the protrusion projected in the radial outward direction a distance equal to about 88.9% of the thickness of the retainer. While applicant does not retract that argument, applicant points out that more recent measurements using an enlarged (200%) copy of FIG. 15 from the USPTO website projected from a transparency on a screen (measurements taken from the image on the screen) reveals different values for the radial outward projection of the protrusion. These values are 78% when compared against the thickness of the retainer at the location of the protrusion and 64% when compared against the thickness of the retainer at the distal edge of the retainer. Appellant submits that both of these measurements (i.e., 64% and 78%) are significantly greater than the 15-30% of the claims. Thus, the Primary Examiner is in error to argue that FIG. 15 of the '652 Sollami Patent addresses the claims.

Second, a careful review reveals that FIG. 15 illustrates the retainer body in cross-section and the protrusion (31) is not in cross-section. In this regard, a reproduction of

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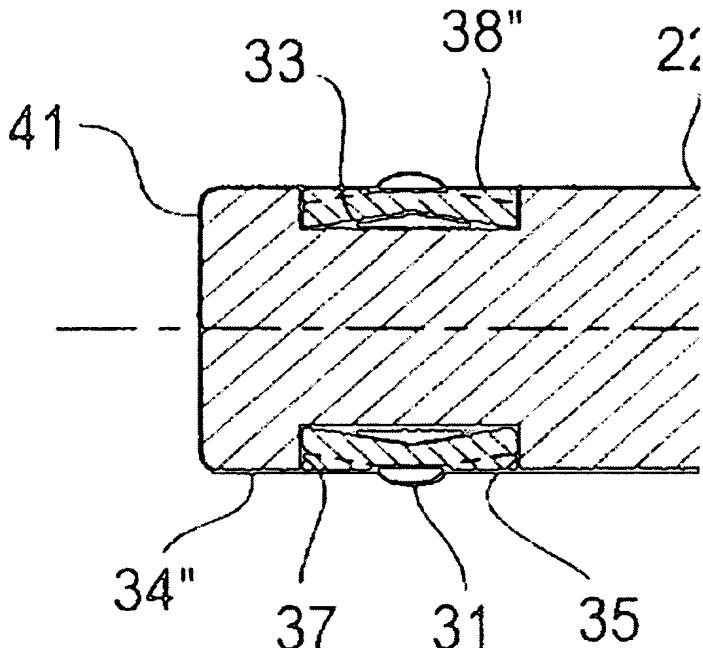


FIG. 15 is set forth above. This is in contrast to a drawing such as FIG. 5 of U.S. Patent No. 4,484,783 to Emmerich (of record in this case) shows both the retainer body and dimple in cross-section.

Basic drafting principles establish that since the protrusion (31) of FIG. 15 is not shown in cross-section, it must be rotated away from the section line. What this means is that the extent of the radial outward projection of protrusion is actually greater than what FIG. 15 shows. Since there is no description as to the extent of the rotation, there is no way to accurately determine the extent of the radial outward projection. This is a fundamental flaw in the Primary Examiner's use of FIG. 15 from Sollami.³

³ Since the protrusion of FIG. 15 is rotated away from the section line, the extent of the radial outward projection of protrusion is actually greater than what is shown in FIG. 15, and hence, more strongly supports appellant's argument that the '652 Sollami Patent cannot address the 15-30% claim limitation of the pending claims.

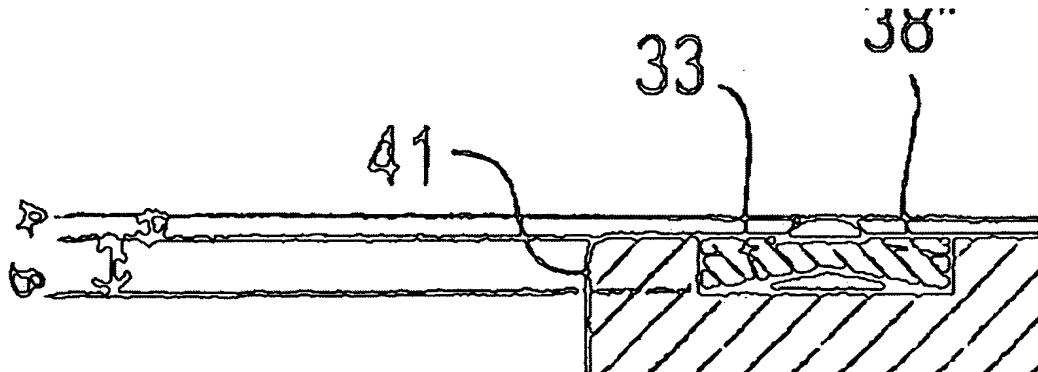
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Further, a careful look at an enlarged version of FIG. 15 shows that the retainer sleeve (38") is somewhat arcuate and is of a generally constant thickness. The fact that retainer sleeve 38" is of a generally constant thickness is consistent with the illustrations of sleeves 38 and 38' in FIGS. 3 and 3A, as well as the broken lines of each surface of the retainer shows that retainer sleeve 38" is of a generally consistent thickness. An enlarged view of the rear portion of the tool (10") of FIG. 15 establishes that the thickness is generally consistent.

A shown by the enlargement of the Primary Examiner's marked-up copy of FIG. 15 (see below), the Primary Examiner takes a measurement such that the thickness of



the retainer (dimension "b" in the attachment to the Office Action) is equal to the depth of the groove (33).⁴ This is inconsistent with the drawing that shows broken lines as representing the surface of the retainer. To the extent that a measurement of the thickness of the retainer is proper, a measurement of the thickness dimension "b" should be taken to correspond to the thickness of the retainer as shown by the broken lines and not to the depth of the groove.

⁴ If a retainer has a thickness equal to the depth of the groove, the retainer would not have the ability to retract and then expand wherein the protrusion engages the interior channel in the bore of the holder.

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Assuming that the measurement of the drawing carries weight, applicant respectfully submits that the Primary Examiner's position regarding FIG. 15 lacks merit because it is based on an inaccurate construction of the drawing of Sollami,

Conclusion

Appellant submits that claims 15-17, 29-30, 32-40 and 43-47 are not anticipated under 35 USC §102(e) by the '652 Sollami patent. It is clear that the '652 Sollami Patent does not address the 15-30% claim limitation of the independent claims under rejection. The dependent claims are allowable for the reasons advanced in support of their respective independent claims. Appellant solicits the reversal of this rejection and a remand to the patent examiner with instructions to allow the claims.

Rejection of claims 15-17, 29-30, 32-34, 36-40 and 43-47

under 35 USC §103(a) as being obvious over U.S. Patent

No. 6,397,652 to Sollami citing *In re Aller*, 105 USPQ 233

The Primary Examiner has rejected claims 15-17, 29-30, 32-34, 36-40 and 43-47 under 35 USC §103(a) over Sollami. The Primary Examiner admits that Sollami, "... is silent about the thickness ratio between the dimple and the sleeve being between 15-30%, ...". See page 4 of the pending Office Action. However, the Primary Examiner then argues that:

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Sollami to have/include the above mentioned limitations, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

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Applicant strongly disagrees with the Primary Examiner's assessment that it would have been obvious to modify the 64%-78%-88.9% projection disclosed in FIG. 15 of Sollami by decreasing the extent of the projection to between the claimed 15%-30%.

The In re Aller, 105 USPQ 233 (CCPA 1955) case concerned a chemical process claim for the production of phenol and acetone wherein the reference disclosed a similar process, except for a higher operating temperature and a lower acidity. The focus of the In re Aller decision was on a chemical process, “[N]ormally, it is to be expected that a change in temperature, or in concentration, or in both, would be an unpatentable modification.” Supra at 235. The opinion went on to say that, “[A]ny chemist reading the article could logically assume that higher yields might be obtainable, and by experimentally varying the conditions of temperature and acidity could find the most productive conditions. ... The skilled chemist who chose to experiment with the reference process would undoubtedly try the conditions defined by the claims.” Supra at 237.

Here, applicant submits that it is not a certain logical conclusion when looking at Sollami that one of ordinary skill in the art would take the Sollami retainer and shorten the protrusions. The focus of Sollami is on the cold forming of a tool body. The only apparent mention of a retainer with protrusions is at Col. 6, lines 48-61, which describes FIG. 15 (a tool that is prior art to Sollami). There does not appear to be any suggestion about reducing the extent of the radial outward projection of the protrusions.

The Primary Examiner has failed to provide any evidence of any motivation whatsoever that would cause one of ordinary skill in the art at the time of the invention to modify the dimples of FIG. 15 by reducing the extension thereof a significant amount of the original length. It is only through the applicant's specification that there comes the suggestion to shorten the extension of the dimples relative to the thickness of the retainer. However, to use the specification to formulate the obviousness rejection is classic hindsight reasoning that cries out for the removal of these rejections. Appellant submits that these

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rejections find their basis in hindsight⁵, and not in fact, and request the Board to reverse these rejections. The simple fact is that the '652 Sollami Patent does not render obvious the claims under rejection because it does not disclose or suggest the 15-30% claim limitation.

Rejection of claims 15-17, 29-30, 32-34, 36-40 and 43-47 under
35 USC §103(a) as being obvious over U.S. Patent No. 6,397,652 to
Sollami citing *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980)

The Primary Examiner has rejected claims 15-17, 29-30, 32-34, 36-40 and 43-47 under 35 USC §103(a) over Sollami. The Primary Examiner admits that Sollami, "... is silent about the thickness ratio between the dimple and the sleeve being between 15-30%, ...". See page 4 of the pending Office Action. However, the Primary Examiner then argues that:

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Sollami to have/include the above mentioned limitations, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

⁵ Appellant submits that it is clear that it is improper for the Primary Examiner to use hindsight reasoning to essentially modify Sollami by reducing the radial outward extension of the protrusions. See MPEP 2141.01 III, page 2100-118 (Rev. 5, August 2006); MPEP 2143.01, page 2100-127 (Rev. 5, August 2006); *Alza Corp. v. Mylan Labs.*, 464 F.3d 1286 (Fed. Cir. 2006); *Dystar Textilfarben GmbH v. C.H. Patrick Co.*, 464 F.3d 1356 (Fed. Cir. 2006). Further, appellant submits that the very recent United States Supreme Court decision in *KSR International Co. v. Teleflex, Inc.*, 550 U.S. ___, 82 USPQ2d 1385 (April 30, 2007) cannot be cited to justify the impermissible use of hindsight in the formulation of an obviousness rejection. In *KSR*, the United States Supreme Court wrote that, "[A] factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning." See 82 USPQ2d at page 1397.

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This rejection is along the lines of the above rejection from Paragraph 5 of the final Office Action of February 8, 2007 so that similar arguments, which focus on the claimed 15-30% limitation, apply. More specifically, in the In re Boesch decision, the claims were directed to a Co-Cr-Ni with an N_v value below a specific limit to unexpectedly avoid the formation of an embrittling phase (i.e., sigma phase). At 205 USPQ 219, the CCPA wrote:

In the above-quoted passage from '838, we note that lowering the N_v value of Co-Cr-Ni alloy and deletion of the metals not consumed in precipitation from the N_v calculation are expressly suggested. Considering, also, that the composition requirements of the claims and the cited references overlap, we agree with the Solicitor that the prior art would have suggested "the kind of experimentation necessary to achieve the claimed composition, including the proportional balancing described by appellant's N_v equation." This accords with the rule that discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art. [citations omitted].

Here, there are no references along the lines of those in the In re Boesch case.

In this case, there is no suggestion in Sollami to reduce the radial outward projection of the dimples from the surface of the retainer to fall within the 15-30% range. Assuming that a measurement of the drawing even has value, Sollami does not disclose a range that overlaps the claimed range of 15-30%. Thus, the key factors cited by the CCPA in In re Boesch to support its conclusion that the prior art would have suggested experimentation to arrive at an optimum value of a result effective variable are absent in this case. Appellant submits that the rationale of In re Boesch cannot support the present obviousness rejection, and solicits the reversal of this rejection. The simple fact is that the '652 Sollami Patent does not render obvious the claims under rejection because it does not disclose or suggest the 15-30% claim limitation.

Rejection of claims 15-17, 29-30, 32-34, 36-40 and 43-47 under

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**35 USC §103(a) as being obvious over U.S. Patent No. 6,397,652
to Sollami citing *In re Rose*, 105 USPQ 237 (CCPA 1955)**

The Primary Examiner has rejected claims 15-17, 29-30, 32-34, 36-40 and 43-47 under 35 USC §103(a) over Sollami. The Primary Examiner admits that Sollami, "... is silent about the thickness ratio between the dimple and the sleeve being between 15-30%, ...". See page 4 of the pending Office Action. However, the Primary Examiner then argues that:

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Sollami to have/include the above mentioned limitations, since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955).

Applicant disagrees that the present claimed invention, which calls for the 15-30% claimed limitation, is a "mere change in size" over Sollami, especially in the context of *In re Rose*, 105 USPQ 237 (CCPA 1955).

In regard to the *In re Rose* case, the claims pertain to a lumber package comprising a number of bundles of banded lumber arranged in a certain fashion. In trying to distinguish over two of the references that disclosed packages that could be lifted by hand, the appellant argued that the claim was to a lumber package of such size that a lift truck was necessary to handle the package. The CCPA wrote that, "[W]e do not feel that this limitation is patentably significant since it at most relates to the size of the article under consideration which is not ordinarily a matter of invention." *Supra* at 240. In *In re Rose*, it is apparent that the difference in the size of the claimed package and the reference provided no benefit or had no impact other than in the size. However, here, the difference between the claimed invention and Sollami regarding the radial outward projection of the dimples from the surface

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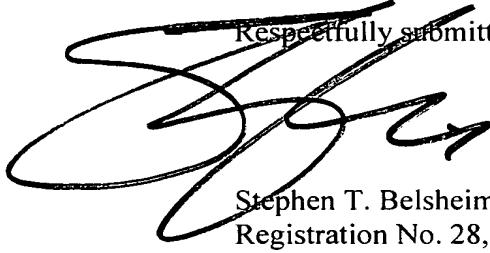
of the retainer has an impact on the function of the retainer.⁶ Here, there is more than a mere change in size in the context of the In re Rose decision so that the rationale of In re Rose does not apply to this situation.

Appellant solicits the reversal of the rejection. The simple fact is that the '652 Sollami Patent does not render obvious the claims under rejection because it does not disclose or suggest the 15-30% claim limitation.

CONCLUSION

Appellant respectfully submits that the pending rejections lack merit for the reasons set forth above. Appellant requests that the Board reverse the Examiner and remand the application back to the Examiner for allowance of the claims.

Respectfully submitted,


Stephen T. Belsheim
Registration No. 28,688

179 Belle Forrest Circle Suite 102
Nashville, Tennessee 37221
Telephone 615-662-0100 & Facsimile 615-662-0352

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⁶ Appellant refers the Board to the discussion found at pages 13-16 of the Response to Non-Final Office Action of July 26, 2004 mailed on November 8, 2004 in this prosecution. This discussion points out the importance of the limits to the range of 15%-30% wherein these limits are performance-oriented.

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CLAIM APPENDIX PER 37 CFR §41.37(c)(1)(viii)

The claims under appeal are set forth below:

15. A cutting tool assembly for rotatable retention within a bore of a bit holder wherein the bore includes a groove, said assembly comprising:

a cutting tool;

a retainer sleeve carried by the cutting tool, and the retainer sleeve including a radially outward projecting dimple that is received within the groove;

wherein said retainer sleeve has a cylindrical circumference and a thickness dimension;

the amount of radial projection of said dimple beyond the cylindrical surface of the retainer sleeve is between a minimum equal to about 15 percent of the thickness dimension of the retainer sleeve so as to provide sufficient holding force to rotatably retain the cutting tool within the bore during operation and a maximum equal to about 30 percent of the thickness dimension of said retainer sleeve so as to provide for a maximum force to allow the removal of the cutting tool from the bore without the necessity of excessive force.

16. A cutting tool assembly according to claim 15, wherein said retainer sleeve includes a plurality of said dimples spaced relative to one another about the circumference of said retainer sleeve.

17. A cutting tool assembly according to claim 15, wherein said dimple is generally semi-spherical.

29. A retainer for use in conjunction with a cutting tool, said retainer comprising:

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a retainer sleeve carried by the cutting tool and including a radially outward projecting dimple;

wherein said retainer sleeve has a cylindrical circumference and a thickness dimension:

the amount of radial projection of said dimple beyond the cylindrical surface of the retainer sleeve is between about 15 percent and about 30 percent of the thickness dimension of said retainer sleeve.

30. A retainer according to claim 29, wherein said retainer sleeve includes a plurality of said dimples equally spaced relative to one another about the circumference of said retainer sleeve.

32. A cutting tool assembly according to claim 15 wherein said dimple extends between about .007 – .020 inches beyond an exterior cylindrical surface of said retainer sleeve.

33. A cutting tool assembly according to claim 17 wherein said dimple has a diameter of between about .06 - .10 inches.

34. A cutting tool assembly according to claim 17 wherein said retainer sleeve has a plurality of said dimples.

36. A retainer according to claim 29 wherein said dimple extends between about .007 – .020 inches beyond an exterior cylindrical surface of said retainer sleeve.

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37. A retainer according to claim 29 wherein said dimple has a diameter of between about .06 - .10 inches.

38. A retainer according to claim 29 wherein said retainer sleeve has a plurality of said dimples.

39. A cutting tool assembly, said assembly comprising:
a cutting tool;
a retainer sleeve carried by the cutting tool, and including a radially outward protruding surface;
wherein said retainer sleeve has a cylindrical circumference and a thickness dimension,
the amount of radial projection of said protruding surface beyond the cylindrical surface of the retainer sleeve is between about 15 percent and about 30 percent of the thickness dimension of said retainer sleeve.

40. A retainer for use in conjunction with a cutting tool, said retainer comprising:
a retainer sleeve carried by the cutting tool and including a radially outward protruding surface;
wherein said retainer sleeve has a cylindrical circumference and a thickness dimension;
the amount of radial projection of said protruding surface beyond the cylindrical surface of the retainer sleeve is between about 15 percent and about 30 percent of the thickness dimension of said retainer sleeve.

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43. A generally cylindrical retainer for use in conjunction with a cutting tool, said retainer comprising:

a retainer sleeve carried by the cutting tool and including at least two radially outward projecting dimples;

wherein said retainer sleeve has a central longitudinal axis and a thickness dimension, and all of said at least two dimples are generally located within a common radial plane;

the amount of radial projection of each one of said at least two dimples beyond the cylindrical surface of the retainer sleeve is between about 15 percent and about 30 percent of the thickness dimension of said retainer sleeve,

wherein said retainer sleeve is constructed from steel.

44. A retainer according to claim 43 wherein said at least two dimples extend between about .007 - .020 inches beyond an exterior cylindrical surface of said retainer sleeve.

45. A retainer according to claim 44 wherein each one of said at least two dimples has a diameter of between about .06 - .10 inches.

46. A retainer according to claim 29 wherein said retainer sleeve has an endface, and a bottom end, wherein a slit extends from said bottom end to said endface.

47. A retainer according to claim 40 wherein said retainer sleeve has an endface, and a bottom end, wherein a slit extends from said bottom end to said endface.

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EVIDENCE APPENDIX UNDER 37 CFR §41.37(c)(1)(ix)

There is no evidence under Sections 1.130, 1.131 or 1.132 that appellant intends to rely upon in this appeal.

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RELATED PROCEEDINGS APPENDIX UNDER 37 CFR §41.37(c)(1)(x)

There are no related proceedings.